STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way, #300 • Pocatello, Idaho 83201 • (208) 236-6160
www.deq.idaho.gov

Governor Brad Little
Director John H. Tippets

January 7, 2020

Ms. Lori Lusty
J.R. Simplot Company
P.O. Box 912
Pocatello, Idaho 83204

****CORRECTED COPY****

Dear Ms. Lusty:

Enclosed, please find the Idaho Department of Environmental Quality's (DEQ) final Point(s) of Compliance (POC) determination for the proposed East Smoky Panel Mine. DEQ is setting this POC, in response to the May 10, 2019 application submitted by J.R. Simplot Company to establish a monitored boundary where Idaho's ground water resources must comply with Idaho's Ground Water Quality Rule (GWQR).

The enclosed determination is divided into three parts. The introduction gives general background information along with an explanation of state authority for regulating ground water. The second part discusses the POC and indicator wells proposed as part of the original application. The final section discusses the monitoring plan for the ground water wells.

The GWQR also allows for changes in point(s) of compliance based on new information or a change in mining activities (IDAPA 58.01.11.401.08). Possible sources of this new information include data from the required ground water monitoring, data from newly installed wells, and any changes to the mine and reclamation plan.

Please let me know if you have any questions. You may also contact Doug Tanner at 208-236- 6160 or Brady Johnson at 208-373-0502 to discuss POC implementation.

Sincerely,

Bruce Olenick
Pocatello Regional Administrator
State of Idaho Department of Environmental Quality

C: Doug Tanner, DEQ Pocatello
Brady Johnson, DEQ Boise
Chad Gentry, Simplot-Smoky Canyon
Kyle Free, BLM-Pocatello

**Introduction**

The proposed East Smoky Panel Mine is located on the east slope of the Webster Range approximately 20 miles west of Afton, Wyoming in Caribou County, Idaho. The project includes acreage in Federal Mineral Leases IDI-015259, IDI-026843, and IDI-012890 all held by J.R. Simplot Company (Simplot) and administered by the Pocatello Field Office of the Bureau of Land Management (BLM). Simplot proposes mining the phosphate ore in the East Smoky Panel in one ultimate open mine pit over a 2- to 12-year period with phases moving from north to south. The existing processing and ancillary facilities at the Simplot owned Smoky Canyon Mine will be used for the East Smoky Panel Mine operations. Reclamation of lands is expected to be complete within two to three years after completion of mining the ultimate pit.

Surface and ground water investigations conducted under the Environmental Impact Statement (EIS) resulted in the identification of potential environmental impacts. Best Management Practices (BMPs) must be used to protect surface and ground water quality within and adjacent to the project area. These BMPs are detailed in the EIS and include:

- Maximum 3H:1V grading of overburden slopes to reduce surface water runoff velocity;
- Use of chert and low seleniferous materials as fill and road material;
- Snow disposal areas where melt would flow to sediment control ponds;
- Drainage and diversion channels to divert run-on around disturbance areas; and
- Placement of overburden material in approved pit backfills to limit exposure.

Based on the predictive model and application of BMPs with the proposed mine design detailed in the EIS, there are no predicted impacts exceeding Idaho's ground water quality standards in the shallow aquifer system and interconnected surface water.

In the regional Wells Formation Aquifer, impacts to ground water are not predicted to exceed Idaho's ground water quality standards at property boundaries. Modeled impacts of selenium in the Wells Formation aquifer is expected to exceed the ground water quality standard (0.05 milligrams per liter [mg/L]) directly below the mine pit boundary with plume concentrations decreasing with distance from the pit.

The Idaho Ground Water Quality Rule (IDAPA 58.01.11.401) allows a mine operator of a new or expanding mine to request the DEQ set point(s) of compliance (POC) at which the mine operator must meet ground water quality standards as described in IDAPA 58.01.11. Simplot submitted a POC application for the East Smoky Panel Mine on May 10, 2019. The application was determined to be complete by DEQ as expressed in a letter to Simplot dated June 12, 2019.

In the application, Simplot proposed the use of existing monitoring wells to establish the POC where impacts from naturally occurring contaminants released from new mining activities will not exceed the ground water quality standards. Several existing wells are located within the vicinity of the East Smoky Panel and are currently being monitored in coordination with the East Smoky Panel Mine EIS or other various ongoing monitoring programs at Smoky Canyon Mine. Ground water quality at many of these locations is impacted from historical mining activities making some existing monitoring well locations ill-suited for differentiating historical contamination from impacts from East Smoky Panel Mine.

Due to the configuration of the ultimate pit, the local geology and structure, only the Wells Formation aquifer is expected to be impacted and all required POC and Indicator wells are completed within the Wells Formation Aquifer. In the POC application, Simplot proposes 5 existing wells completed within the Wells Formation Aquifer to be incorporated into the POC monitoring (Figure 1).

**Proposed Points of Compliance and Indicator Wells**

- GW-24 – DEQ agrees with the location and use of this proposed existing well as a Wells Formation Aquifer POC well.
- ES-MW7 – DEQ agrees with the location and use of this proposed existing well as a Wells Formation Aquifer indicator well.
- GW-27 - DEQ agrees with the location and use of this proposed existing well as a Wells Formation Aquifer indicator well.
- GW-29 - DEQ agrees with the location and use of this proposed existing well as a Wells Formation Aquifer indicator well.
- GW-30 - DEQ agrees with the location and use of this proposed existing well as a Wells Formation Aquifer indicator well.

DEQ has determined no additional POC wells are required at this time.

**Ground Water Monitoring Plan**

Ground water monitoring will be conducted as approved under the final Environmental Monitoring Plan as part of the BLM-approved Mine and Reclamation Plan.

**Annual Report**

An annual report is due on or before June 30 of each year for the preceding year or as required under the approved Environmental Monitoring Plan. The report is to include a summary of data collected the prior year, discussion of any anomalous or unexpected data, and all available validated water quality data from all POC and indicator wells in an electronic, editable format (e.g. Excel, .txt). Identification of any possible data gaps or unanticipated changes in water quality or site conditions or modifications should also be presented and discussed. As such, DEQ will determine based upon the information submitted, Simplot's compliance with the Idaho Ground Water Quality Rule and the effectiveness of the BMPs for the mine activities. The report should identify proposed or approved background concentrations at the monitoring locations identified in the POC along with ground water quality standards listed in the Idaho Ground Water Quality Rule.

**Monitoring Constituents**

The constituents monitored for ground water compliance at each monitoring well must include those required under the approved Environmental Monitoring Plan (Table 1). Samples will also be collected at the required frequency and data reported annually to the DEQ. DEQ will consider removal of constituents from the list by written request from Simplot. DEQ will consider addition of constituents to Table 1, by a written request from Simplot or governing Agency as agreed to by all parties or at the requirement of DEQ.

**Table 1. Minimum ground water constituents to be monitored for the East Smoky Panel Mine POC.**

| Parameter | Analytical Fraction |
|---|---|
| Nitrate-nitrite (as N) | |
| pH, Laboratory | |
| pH, Field | |
| Sulfate | Dissolved |
| TSS | Total |
| TDS | Dissolved |
| Turbidity | |
| | |
| Aluminum | Total/Dissolved |
| Antimony | Total/Dissolved |
| Arsenic | Total/Dissolved |
| Cadmium | Total/Dissolved |
| Chromium | Total/Dissolved |
| Iron | Total/Dissolved |
| Lead | Total/Dissolved |
| Manganese | Total/Dissolved |
| Selenium | Total/Dissolved |
| Zinc | Total/Dissolved |

**Monitoring Schedule**

All wells are expected to be monitored quarterly, as weather allows access, resulting in four samples from each location, annually.

**POC Well Background Analysis**

Simplot will submit a background ground water quality analysis for all POC and Indicator wells for DEQ review and approval for all constituents listed in Table 1 by January 3, 2020.
Development of background water quality will follow DEQ's statistical guidance[1] or other statistical methods for determining background as approved by DEQ. The report will outline the methodology used to develop site background water quality and represent the quality of ground water passing the POC and Indicator Wells in order to determine compliance with ground water quality standards or effectiveness of the BMPs. The analysis will provide upper limits of current conditions and predicted maximum constituent concentrations at the POC and Indicator well locations.

**Data Summary Notice**

If data indicate ground water quality standards of DEQ approved background limits have been exceeded during a sampling event a data summary notice will be prepared and submitted to DEQ no later than 60 days after the last sample is collected during a particular field event (e.g. monthly, quarterly, spring, fall). The summary will include notification of any ground water quality standard exceedance and all data

[1] DEQ, 2014. Statistical Guidance for Determining Background Ground Water Quality and Degradation. March 2014.

collected during the event.

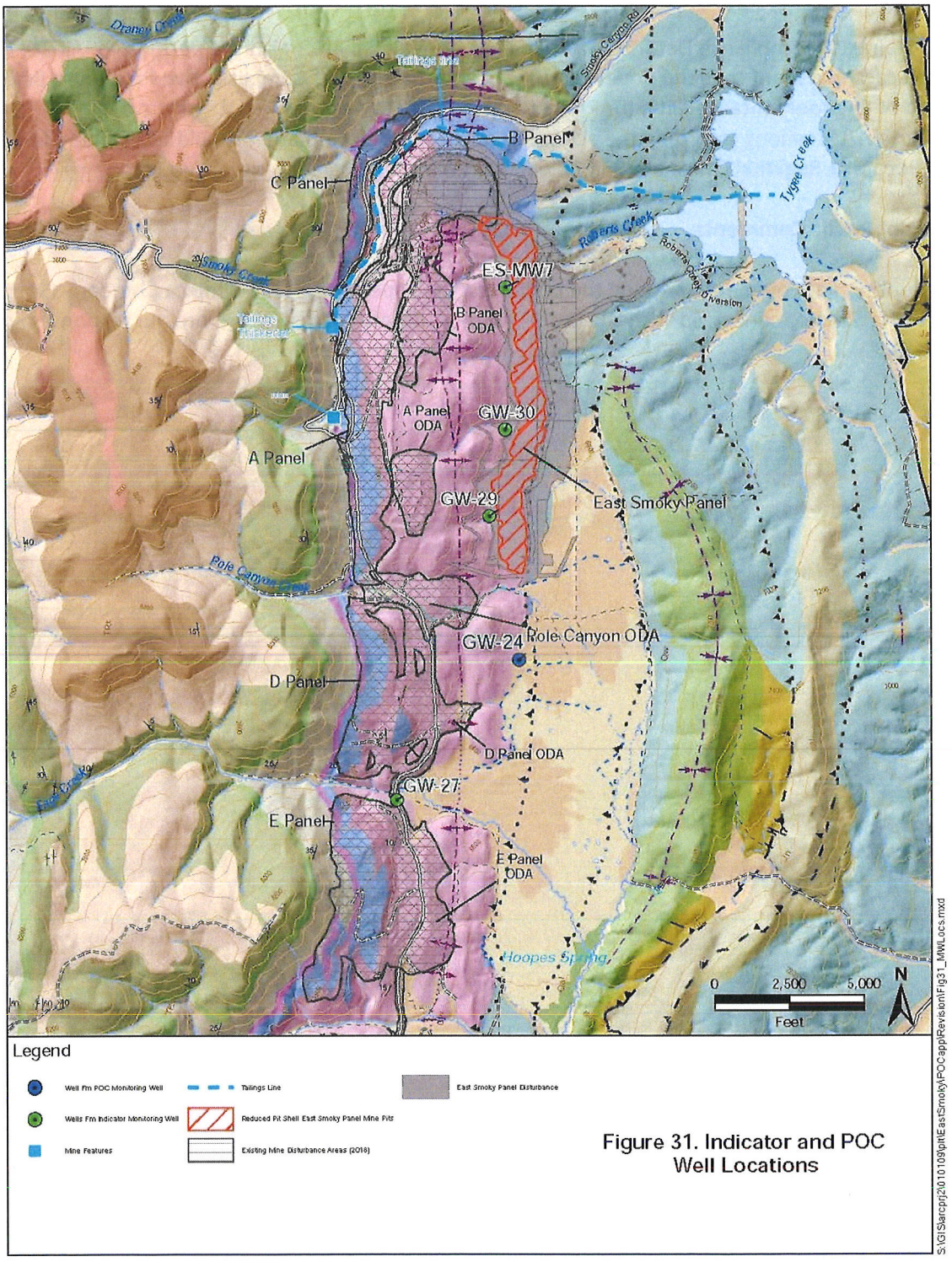
**Right to Appeal Final Determination**

The final Points of Compliance Determination may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code§ 39-107(5), and the Rules of Administrative Procedure Before the Board of Environmental Quality, IDAPA 58.01.23, within 35 days of the date of the final determination. Questions regarding the actions taken in this determination should be directed to Doug Tanner, Pocatello Regional Office at 208.236.6160 or email at Douglas.tanner@deq.idaho.gov.

**Summary of Public Comments**

The only entity that commented during the public comment period was J.R. Simplot Company (See Appendix A). Simplot concurred with the Draft Final POC determination, therefore, no response by DEQ is necessary.

**Figure 1. Indicator and POC Well Locations (*From the April 4, 2019 Simplot POC Application, Figure 31*).**



**Appendix A.**

Simplot

**J. R. Simplot Company**
P.O. Box 912 Pocatello, ID 83204

208 235-5670 Business
208 241-8484 Cell

November 12, 2019

**SENT VIA EMAIL TO:** Brady.Johnson@deq.idaho.gov

Attn: Brady Johnson Technical Services Division DEQ State Office
1410 N. Hilton St.
Boise, ID 83706

Dear Mr. Johnson:

The J.R. Simplot Company (Simplot) appreciates the opportunity to comment on the final Point(s) of Compliance (POC) determination for the East Smoky mine panel.

As you are aware, this POC determination relies upon the predictive groundwater modeling conducted for the East Smoky mine panel which was conservative and comprehensive. Over 325 simulations were developed to analyze random variables for three different infiltrations rates amounting to 972 simulations for each alternative. In total, 1,944 different, but equally probable realizations were developed for the four potential contaminants of concern. The upper limit of the 95th percent confidence interval for the mean predicted concentration was relied upon for the analysis. The monitoring and decisions within this POC determination provides the necessary confidence for the public and Simplot.

Please contact me at (208) 780-7365 or Lori Lusty at (208) 235-5670 if you have any questions regarding these comments.

Sincerely,

Alan Prouty
Vice President, Environmental and Regulatory Affairs Enclosure
c: Doug Tanner, Idaho Department of Environmental Quality Lori Lusty, J.R. Simplot Company
Chad Gentry, J.R. Simplot Company

# J.R. Simplot Comments on Draft Final Point(s) of Compliance Determination for East Smoky Panel Mine

The J. R. Simplot Company (Simplot) appreciates the Idaho Department of Environmental Quality's (IDEQ) consideration of the following comments on the East Smoky Panel Mine Project Draft Final Point(s) of Compliance (POC) determination. IDEQ has completed a thorough review of Simplot's POC Application (Simplot 2019) consistent with the Idaho Ground Water Quality Rule. Simplot concurs with the Draft Final POC determination and provides these comments to summarize the main concepts regarding the adequacy of the proposed POC well, indicator wells, and the limited potential effects of the proposed East Smoky Panel Mine on Wells Formation groundwater quality and water quality at Hoopes Spring.

Consistency with Idaho Ground Water Quality Rule and Adequacy of Monitoring

The Idaho Ground Water Quality Rule (IDAPA 58.01.11.401) allows a mine operator of a new or expanding mine to request IDEQ to set POC(s) at which the mine operator must meet groundwater quality standards as described in IDAPA 58.01.11. The Draft Final POC Determination (IDEQ 2019) sets a monitored boundary where groundwater resources must comply with Idaho's Ground Water Quality Rule. As described in the POC Application (Simplot 2019) and the East Smoky Panel Draft Environmental Impact Statement (EIS) (BLM and USFS 2018), leaching of contaminants of potential concern (COPC) from pit backfills to the underlying Wells Formation aquifer is the primary transportation pathway to groundwater and eventual surface water impacts due to proposed East Smoky Panel mining activities.

Due to the configuration of the ultimate mine pit and the local geology and structure, only the Wells Formation aquifer is expected to be impacted. Groundwater modeling conducted to support the Draft EIS (BLM and USFS 2018), confirms this and indicates that there will be no potential impacts to the shallow aquifer systems or interconnected waterways. As such, the Wells Formation aquifer is the target for monitoring to determine compliance with groundwater quality standards in the Ground Water Quality Rule, demonstrate effectiveness of best management practices (BMPs), and to ensure protection of current and potential future beneficial uses of groundwater. The proposed POC monitoring is therefore limited to the Wells Formation aquifer.

As stated in the Draft Final POC Determination, IDEQ agrees with the location and use of existing well GW-24 as a Wells Formation aquifer POC well for the proposed East Smoky Panel Mine (IDEQ 2019). Simplot proposed to use GW-24 as a POC for the following reasons:

- Monitoring well GW-24 is located along the West Sage Valley Branch fault zone within the general groundwater flow pathway from the proposed East Smoky Panel Mine to groundwater discharge areas at the Hoopes and South Fork Sage Creek spring complexes;
- GW-24 is located outside but as close as possible to the boundary of the proposed East Smoky Panel mining area;
- Groundwater quality at this location is not currently impacted by historical mining activities and there are no impacts to current or projected future uses of groundwater at the monitoring location; and
- There is no violation of water quality standards applicable to any interconnected surface waters.

While there is only one monitoring well designated as the POC well for East Smoky Panel Mine, in accordance with the Ground Water Quality Rule (IDAPA 58.01.11.40104.b), additional monitoring wells can be designated as indicator wells and used not to determine compliance with groundwater quality standards, but to evaluate modeling results, to predict groundwater quality at the POC, or to determine the effectiveness of BMPs. As stated in the POC Determination (IDEQ 2019), IDEQ agrees with the location and use of four (4) existing Wells Formation wells within the vicinity of the East Smoky Panel Mine as indicator wells. Total selenium concentrations at these indicator locations are below the groundwater quality standard and are located within the zone of groundwater predicted to be influenced by the proposed East Smoky Panel Mine. Groundwater quality at GW-27 exhibits some impacts due to historical mining activities but selenium concentrations are relatively stable and remain below the groundwater quality standard. Well GW-27 has value as an indicator well because the well was used as an

observation point in the groundwater model prepared for the East Smoky Panel Mine EIS and is located within the center of the model predicted groundwater transport pathway (BLM and USFS 2018). The model-predicted selenium concentrations at 100 years following East Smoky Panel mining activities and the proposed POC and indicator wells are shown on Figure 1. As required by IDEQ in the POC Determination (IDEQ 2019), Simplot will conduct quarterly groundwater monitoring and annual reporting in accordance with the Ground Water Quality Rule (IDAPA 58.01.11.401.04.a-c). Groundwater monitoring will be conducted as required under the Record of Decision as part of the Bureau of Land Management (BLM)-approved Mine and Reclamation Plan (IDEQ 2019).
In addition to groundwater monitoring for the POC, the Smoky Canyon Mine has an on-going groundwater and surface water monitoring program with an extensive history of monitoring that is being conducted in accordance with various CERCLA investigations and Consent Orders with the State of Idaho. Several existing wells and surface water locations at Hoopes Springs and in Sage Valley are within the vicinity of the proposed East Smoky Panel and are currently being monitored as part of the existing program at the Smoky Canyon Mine. As described in the POC Application (Simplot 2019), groundwater at many of these existing locations has been impacted due to historical mining activities. While these locations are not well suited for direct inclusion in the POC monitoring program for the proposed East Smoky Panel Mine, this existing monitoring provides an important regional context for the evaluation of any potential incremental influences on groundwater and surface quality.
Limited Influence at Hoopes Springs

As described in the POC Application (Simplot 2019), the direction and rate of groundwater flow in the Wells Formation aquifer have been well characterized through previous CERCLA and National Environmental Policy Act (NEPA) investigations, the ongoing groundwater and surface water monitoring programs at the Smoky Canyon Mine, and the monitoring and testing conducted to support the baseline investigation for the East Smoky Panel Mine EIS.

Regional groundwater flow within the Wells Formation aquifer in the vicinity of the proposed East Smoky Panel Mine results from recharge to the east via precipitation and snowmelt to Wells Formation outcrops in the Salt River Range, recharge to the west in Wells Formation outcrops along Freeman Ridge (Snowdrift Anticline) and Dry Ridge (Dry Ridge Anticline), local recharge from precipitation and stream loss where the Wells Formation outcrops along the Boulder Creek Anticline, and groundwater discharge at Hoopes Spring and South Fork Sage Creek springs located southeast of the proposed East Smoky Panel Mine. Recharge to the east along the Salt River Range results in a westerly flow of groundwater in the lower portions of the Wells Formation aquifer that is older than groundwater derived from recharge in areas west of the proposed East Smoky Panel Mine due to the greater travel distance. Discharge at the Hoopes and South Fork Sage Creek spring complexes induces a southerly groundwater flow direction in the proposed East Smoky Panel Mine area and a mixing of the deeper older and shallower younger water at the springs. Groundwater flow paths in the Wells Formation aquifer are limited by the north-south trending West Sage Valley Branch Fault, which runs through the East Smoky Panel. This fault acts as a barrier to eastward flow in the Wells Formation due to the presence of strata of relatively low hydraulic conductivity east of the fault and a preferential flow path to the south along the fault damage zone.

The groundwater hydraulic gradient in the Wells Formation along the flow path from the proposed East Smoky Panel Mine to the Hoopes Springs complex is small (generally less than 0.004 foot/foot) and the groundwater flow velocity is approximately 1 to 2 feet per day. The groundwater travel time from the southern limit of the proposed East Smoky Panel Mine to the Hoopes Spring complex is estimated to be approximately 30 to 50 years (HGG 2018). Potential contaminants that could result from mining activities are contained within the seleniferous shales, mudstones, limestones, and cherts of the overburden material that would be removed and then backfilled in the mined-out pits of the proposed East Smoky Panel Mine. Relative to the historic mine, the volume of seleniferous overburden projected to be mined under the reduced pit shell alternative at the East Smoky Panel is significantly less. As Simplot has provided in their comments to the draft EIS, only 34% of the overburden is expected to be seleniferous while 56-72% of mined overburden from historic panels of the mine is seleniferous (Simplot 2018). Precipitation that infiltrates into the overburden backfill can leach COPCs and potentially impact underlying Wells Formation groundwater. It is predicted that impacts to Wells Formation groundwater quality will be greatest near the backfilled pits and diminish with distance from the pits. The model- predicted extent of selenium in

groundwater that would exceed the groundwater quality standard (0.05 milligrams per liter [mg/L]) would not extend beyond the mine pit boundary. Due to the slow movement of groundwater and attenuation along the flow path, modeling results predict an increase in the selenium concentration at Hoopes Spring of only approximately 1 part per billion (ppb) about 80 years after mining of the East Smoky Panel has been completed (BLM and USFS 2018). Surface water quality impacts downstream in Sage Creek and Crow Creek would be negligible.

**References**

Bureau of Land Management and U.S. Forest Service (BLM and USFS), 2018. Draft Environmental Impact Statement for the Proposed East Smoky Panel Mine Project at Smoky Canyon Mine. September.

Idaho Department of Environmental Quality (IDEQ), 2019. Draft Final Point of Compliance Determination for East Smoky Panel Mine. October/November.

HydroGeo Group 2018. East Smoky Panel of the Smoky Canyon Mine Numerical Modeling Technical Memorandum. March

J.R. Simplot Company (Simplot), 2019. Point of Compliance Application, Proposed East Smoky Panel Mine Project, Smoky Canyon Mine, Caribou County, Idaho. April.

J.R. Simplot Company (Simplot) 2018. Comments to East Smoky Draft Environmental Impact Statement, Smoky Canyon Mine, Caribou County, Idaho. December.

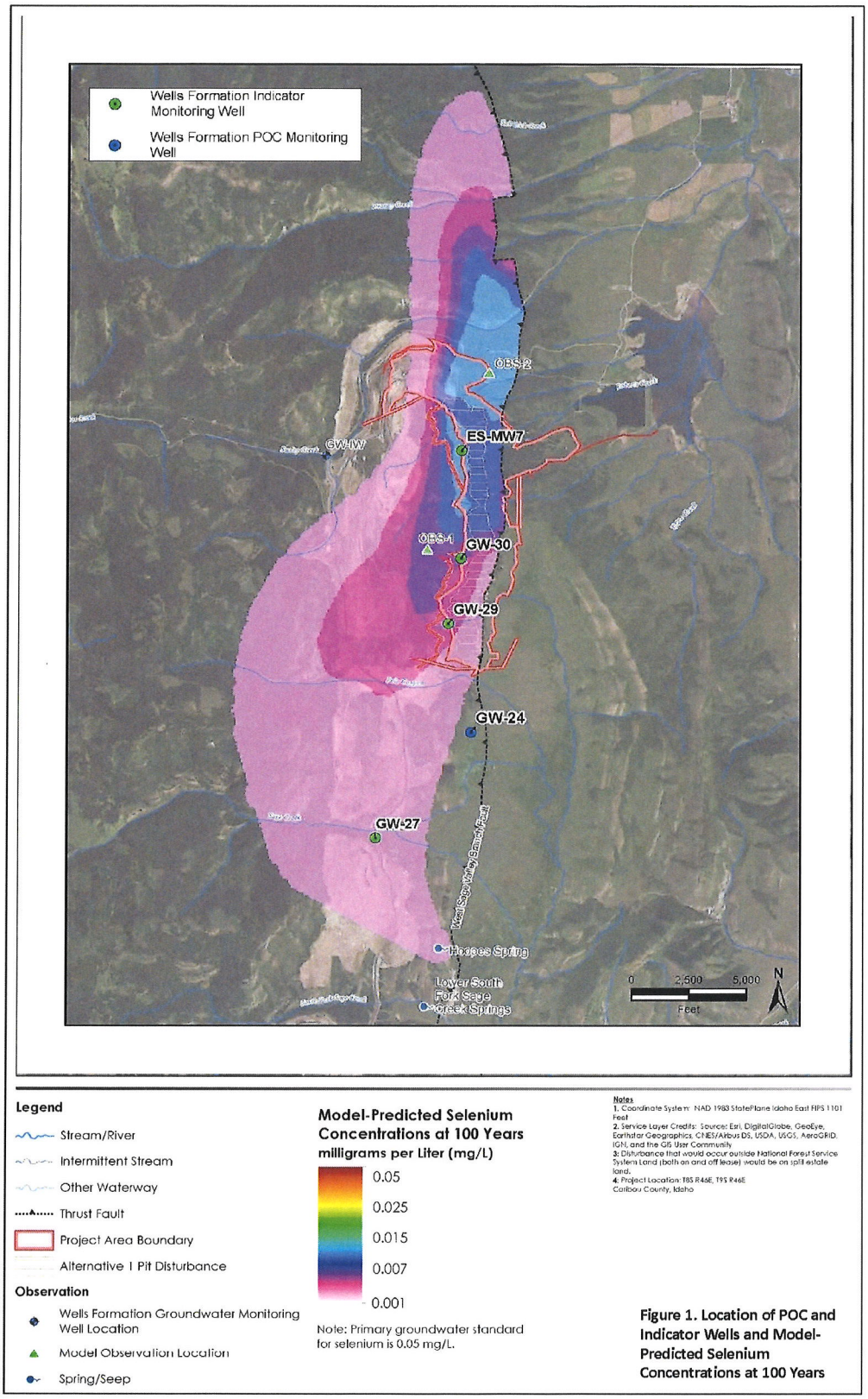



**Figure 1. Location of POC and Indicator Wells and Model-Predicted Selenium Concentrations at 100 Years**